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[Stellar collapse and gravitational waves]Stellar collapse and

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abstract

The new generation of gravitational wave (GW) detectors have the potential to open a novel window onto the violent dynamics of core collapse. Although it is certain that core collapse events generate gravitational radiation, understanding the characteristics of the radiation — whether it can be measured with these detectors, and the best way to go about doing so — is a challenging problem. In this chapter we review the promise of GWs as observational probes, including a discussion of the current state of GW detectors, and discuss the status of work to understand the waves generated by stellar core collapse.